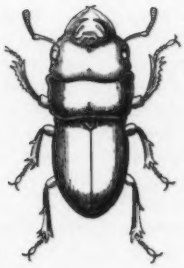
Thomas Say

Entomological News



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CONTENTS:

Webster—Thomas Say	1	Notes and News	18
Slosson—Additional list of insects taken in alpine region of Mt. Washington	4	Entomological Literature	21
Ottolengui—Aberration, variety, race and form	7	Doings of Societies	26
Hulst—North American Geometrina in European collections	11	Entomological Section	27
Knab—Ant nests	15	Baker—Biological notes on some Colorado Coleoptera	27
Editorial	17	Schaus—A new Phægoptera from Mex.	29
		Williston—A new Tachinid with remarkable antennæ	29

THOMAS SAY.—I

By Prof. F. M. WEBSTER, Wooster, Ohio.

During late Autumn of the year 1888, the writer had the pleasure of spending a few days in New Harmony, Ind., a guest of the late Col. and Mrs. Richard Owen, both of whom were residents of that somewhat famous little city during the nine years that "The Father of American Entomology" made it his home, and with whom they were both personally acquainted. Though at that time upwards of ninety years old, Col. Owen and his good wife pointed out many, to me, historic places, made sacred by their associations with Thomas Say, and feeling that not only such places would sooner or later disappear, but those who were able to give their history from personal recollections would within a few years cross the Dark River, I engaged to have a series of photographic views taken under the supervision of my host and hostess. The three views that are to follow in forthcoming numbers of the NEWS, were thus obtained, and will be explained as they are consecutively used. The portrait included in this number is from a photograph of a steel engraving in the possession of Mr. Frategot, of New Harmony, to whose father it was

presented by Say, who considered it a very faithful picture of himself. Dr. Skinner informs me that there is another of these engravings in the library of The Academy of Natural Sciences of Philadelphia, and beyond this I know nothing of the history of the original, nor could I learn anything of it at New Harmony.

In this portion of my sketch, the aim will be to follow Say only to his removal from Philadelphia to Indiana, in 1825, the remainder will accompany the engravings which illustrate his life in his Western home.

As the author has not been able to himself secure any important data from the people of New Harmony relative to the life of Say prior to his coming West, he is for this information obliged to draw very largely upon the memoir read by Say's friend, Mr. George Ord, before the American Philosophical Society, Dec. 19, 1834, and published in the LeConte edition of Say, pp. vii–xxi, vol. i.

Thomas Say was born in Philadelphia, July 27, 1787, of Quaker parentage, at least on his father's side, the latter being a physician and apothecary. Thomas was educated under Quaker patronage, which probably compared favorably with the educational ideas of the times, but the embryo entomologist appears to have had a too warm love for nature to take kindly to such unnatural methods of acquiring knowledge, and as a result his distaste for letters frequently appeared in his publications during after life. With the thrift and industry so frequently a marked characteristic among the Friends, it is not surprising that his father should seek to place his son in a respectable avocation, and, hence, after he left school, Say was first taken into partnership in business by his father, and later established, with others, a separate firm, to continue in the same useful calling. Here, again he gave token of his future, and at this early day appears to have thoroughly abhorred a life of buying and selling as he did in later years. He appears to have inherited the mild, lovable disposition of the sect from whence he sprung, but not their thrifty financial ability. He was, during his whole career, generous to a fault, but his honesty and integrity has never been questioned. In the minds of those of his acquaintances who yet survive him, he lives as a man who loved his neighbor even better than himself and who never had an enemy. With such a character it is not in the least surprising that he did not succeed in business, but became

pecuniarily responsible for the engagements of others, a course ending in failure and bankruptcy. His financial reverses, however, do not seem to have weighed heavily upon his mind, but, on the contrary, as the grieved child turns to its mother's arms for solace and soothing words, so Thomas Say, in his financial troubles, appears to have sought consolation in his studies of nature, quietly living what Bryant wrote in the opening stanza of Thanatopsis, and, disregarding his losses, found that healing sympathy, that stole away their sharpness ere he was aware.

Mr. Say became a member of The Academy of Natural Sciences of Philadelphia in April, 1812, soon after it had been reorganized, and when the crisis in his financial affairs left him stranded, took up his abode in the building in which the Academy held its meetings, and turning his back on the financial world as it were, began his entomological labors in earnest. It was here that he was brought in close contact with his afterwards friend and benefactor, William Maclure, Esq., but of their relations later we shall have more to say further on in our series of sketches. It was in the Journal of the Academy of Sciences, began in 1817, that Say first appears as an author, which seemed to strengthen the bonds binding him more closely to his chosen field of scientific investigation. In 1818, with Messrs. Maclure and Titian R. Peale, he visited the sea islands and adjacent coast of Georgia and eastern Florida, from which latter region they were driven by the hostility of the Spanish, who yet had control of the territory. It was doubtless this journey that paved the way for his connection with the two scientific expeditions fitted out by the United States Government, and placed under the command of Major Long, with Thomas Say as chief zoologist. The years intervening between 1818 and 1825, when he left Philadelphia, were certainly busy ones for Say, who, aside from his connection with these expeditions which necessarily required considerable time in accompanying them to the then unexplored regions of the West, he was for a time Professor of Natural History in the University of Pennsylvania, and of Zoology to the Philadelphia Museum. Two of the three volumes of his "American Entomology" were published, and besides this all of the ornithological papers appearing in the Journal of the Academy of Natural Sciences, to which the name of Charles Bonaparte is attached, were edited by him at the request of the author. More than this,

he prepared for the press the first volume of Bonaparte's "Natural History of Birds Inhabiting the United States," though it was afterwards revised by another. So fully was he occupied with his own labors, and so freely did he devote his time to assist others, that he prolonged his studies far into the night, even during Summer until the breaking of day, thus sapping his life for the benefit of science and his fellow-man. Even before he left his native city he was much broken down in health, though giving freely both of his time and means, when he had any, and willing to do even more. Such was Thomas Say at the age of thirty-eight, when he was induced by Messrs. Maclure and Owen to accompany them to their confraternity of New Harmony. Of his life and labors in Indiana during the remaining nine years of his life I shall speak farther in a second paper.

———o———

ADDITIONAL LIST OF INSECTS TAKEN IN ALPINE REGION OF MT. WASHINGTON.

By Annie Trumbull Slosson.

A year ago I published (Ent. News, vol. v, p. 1) a catalogue of the insects I had up to that time taken on the summit of Mt. Washington. That list comprised 300 species. I have this season taken in same region, at or above 5500 feet altitude, more than 200 species not included in former list. I herewith append the names of these, and I take this opportunity to acknowledge gratefully the invaluable assistance of Messrs. Coquillett, Liebeck, Fox, Davis, Banks, Van Duzee and others, who have identified for me insects in the different orders.

HYMENOPTERA.

Tenthredinidæ.

Hylotoma pectoralis *Leach.*
Harpiphorus maculatus *Nort.*
Monophadnus tiliæ *Nort.*
Macrophya slossonia *MacG.* mss.
" tibiator *Nort.*
Taxonus borealis *MacG.* mss.
Tenthredo grandis *Nort.*
" ruficolor *Nort.*
" tricolor *Nort.*
" variata *Nort.*
Lyda semidea *Cr.*

Uroceridæ.

Urocerus abdominalis *Harr.*

Ichneumonidæ.

Ichneumon brevicinctor *Say.*
" funestus *Cr.*
" lætus *Brulle.*
" milvus *Cr.*
" pravus *Cr.*
" promptus *Cr.*
" sp.?

Cryptus atricollaris var.
" montivagus *Prov.*
" sp.?
" sp.?
" sp.?
Limneria flaviricta *Cr.*
" hostilis *Cr.*?
Banchus sp.?
Euceros n. sp.
Lampronota rubrica var.? *Cr.*
" sp.?
Meniscus elegans *Cr.*
" superbus *Prov.*
" slossonæ *Davis* mss.

Braconidæ.

Ascogaster rufipes *Prov.*
Macrodus sp.?
Opius n. sp.

Chalcididæ.

Chalcis flavipes *Fab.*

Myrmicidæ.

Leptothorax canadensis *Prov.*

Pompilidæ.

Pompilus apicatus *Prov.*

Andrenidæ.

Prosopis varifrons var.?
Andrena sp.?

Apidæ.

Nomada bisignata *Say.*
Bombus terricola *Kirby.*

HEMIPTERA.

Heteroptera.

Ischnorhynchus didymus *Zett.*
Rhinocapsus van duzei *Uhl.*
Plagiognathus obscurus *Uhl.*
Pagasa nitida *Stal.*
Diplodus luridus Stal.

Hanoptera.

Delphacinus vittipennis *VanD.* mss
Helicoptera septentrionalis *Prov.*
Idiocerus lachrymalis *Fitch.*
" suturalis *Fitch.*
" pallidus *Fitch*?
Thamnotettix kennicotti *Uhl.*
Aphid gen.? sp.?

COLEOPTERA.

Cicindelidæ.

Cicindela 6-guttata *Fab.*

Carabidæ.

Bembidium quadrimaculatum *Linn*
Platynus quadripunctatus *DeG.*
Harpalus viridiæneus *Beauv.*
Tachycellus nigrinus *Dej.*

Gyrinidæ.

Dineutes sp.?

Staphylinidæ.

Tachyporus chrysomelinus *Linn.*
Pæderus littorarius *Grav.*
Mycetoporus lepidus *Horn.*

Coccinellidæ.

Hippodamia parenthesis *Say.*
Hyperaspis lugubris *Rand.*
Scymnus tenebrosus *Muls.*

Cryptophagidæ.

Atomaria ephippiata *Zimm.*?

Histeridæ.

Hister interruptus *Beauv.*

Nitidulidæ.

Epuræa ovata *Horn.*
Ips sanguinolentus *Oliv.*

Elateridæ.

Adelocera aurorata *Lec.*
Elater fusculus *Lec.*
" pullus *Germ.*

Buprestidæ.

Dicerca divaricata *Say.*

Cerambycidæ.

Criocephalus asperatus *Lec.*
Bellamira scalaris *Say.*
Xylotrechus quadrimaculatus *Hald*
Acanthocinus obliquus *Lec.*

Chrysomelidæ.

Diachus auratus *Fab.*
Typophorus 4-notatus *Say.*
" thoracicus *Melsh.*
Prasocuris varipes *Lec.*
Disonycha pennsylvanica *Ill.*
" xanthomelæna *Dalm.*
Crepidodera helxines *Linn.*

Melandryidæ.

Emmesa connectens *Newm.*

Pythidæ.

Salpingus virescens *Lec.*

Meloidæ.

Epicauta cinerea *Forst.* var.?

Curculionidæ.

Pissodes affinis *Raud.*
Anthonomus scutellatus *Gyll.*
Hylobius pales *Hbst.*
Cryptorhynchus bisignatus *Say.*

Scolytidæ.

Xyloterus bivittatus *Kirby.*
Polygraphus nigripennis.
Dryocœtes autographus.

DIPTERA.

Bolitophila fusca* *Meig.*
Simulium pisicidium *Riley.*
Bibio femoratus *Wied.*
Gnophomyia tristissima *O. S.*
Bittacomorpha clavipes *Fab.*
Arthroceras leptis *O. S.*
Stratiomyia picipes *Lw.*
Pangonia tranquilla *O. S.*
Chrysops indus *O. S.*
Laphria canis *Willst.*
Hybos triplex *Walk.*
Empis ravida *Coq.* mss.
Dolichopus longimanus *Lw.*
Psilopus sipho *Say.*
Lonchoptera lutea *Panz.*
Didea laxa *O. S.*
Volucella evicta *Walk.*
Mallota posticata *Fab.*
Temnostoma venustum *Willst.*
Platypeza obscura *Lw.*
Jurinia algens *Wied.*
Echinomyia florum *Walk.*
Nemoræa n. sp.
Exorista platysamiæ *Town.*
" n. sp.
Masicera n. sp.
" luctuosa *v. d. W.*
Frontina n. sp.
Eulasiona comstocki *Town.*
Ennyomma clistoides *Town.*
Chætona tenebrosa *Coq.* mss.
Cynomyia grœnlandica *Zett.*
" flavipalpis *Macq.*
Calliphora vomitoria *Linn.*
" erythrocephala *Meig.*
Hæmatobia serrata *Desv.*
Musca domestica *Linn.*
Aricia marmorata* *Zett.*
" vagans* *Fall.*
" nigrifrons *Walk.*
" sp.?
" sp.?
" sp.?
Spilogaster carbonella* *Zett.*
Hydrotæa occulta* *Meig.*
Hylemyia lipsia *Walk.*
Phorbia floccosa *Macq.*
" fusciceps *Zett.*
" perrima *Walk.*
Homalomyia caniculatus *Linn.*
Caricea albicornis* *Meig.*
" substituta *Walk.*
" lata *Walk.*
" nivea *Linn.*
" solita *Walk.*
" intacta *Walk.*

* "Not before recognized from America," D. W. Coquillett.

Cordylura slossonii *Coq.* mss.
Scatophaga merdaria* *Fab.*
Blepharoptera discolor *Lw.*
Sciomyza albocostata *Fall.*
Tetanocera arcuata *Lw.*
" rotundicornis *Lw.*
" valida *Lw.*
" plebja *Lw.*
Loxocera pleuritica *Lw.*
Psila bicolor *Meig.*
Trypeta fausta *O. S.*
Palloptera arcuata* *Fall.*
Sapromyza compedita *Lw.*
" philadelphica *Macq.*
Chlorops grata *Lw.*
Borborus equinus *Fab.*
Trineura aterrima *Fab.*
Phora femorata* *Meig.*
" nigriceps *Lw.*
" giraudii* *Egger.*

LEPIDOPTERA.

Heterocera.

Albuna montana *Hy. Edw.*
Platagrotis imperita *Gn.*
Semiophora elimata *Gn.*
Carneades dissona *Moesch.*
Semiothisa granitata *Gn.*
Epirrita sp.?
Crambus vulgivagellus *Zell.*
Ptycholoma persicana *Fitch.*
Gelechia sp.?
Pterophorid gen.? sp.?

ARACHNIDÆ.

Araneæ.

Steatoda marmorata *Hentz.*
Bathyphantes alpina *Em.*
Crustulina sticta *Camb.*
Linyphia mandibulata *Em.*
Ceratinella emertoni *Camb.*
Tmeticus montanus *Em.*
Dismodicus alpinus *Bks.* mss.
Epeira nordmanni *Em.*
" silvatica *Em.*
Lycosa pictilis *Em.*
Pirata insularis *Em.*
" minuta *Em.*
Pardosa albomaculata *Em.*
" pallida *Em.*
" minima *Keys.*
Dendryphantes sp. ("probably new" *Bks.*)
Attus cruciatus *Em.*

Acarina.

Trombidium sp.? (immature).
Actineda agilis *Bks.*
Bdella cardinalis *Bks.*
Gamasus sp.?

ABERRATION, VARIETY, RACE and FORM.

By Dr. RODRIGUES OTTOLENGUI.

Some months ago I received a pair of insects which, while closely resembling a well-known species of Bombycid, yet were markedly different in coloring. I showed them to a prominent specialist in this group and he expressed the opinion that they had been artificially produced. Another gentleman thought they represented a good variety; a third thought them aberrations, and finally another prominent entomologist advised me to name and describe them as a new species.

* "Not before recognized from America," D. W. Coquillett.

I have also had similar experience with other specimens which I have thought worthy of at least a varietal name, but in every instance I have been advised not to describe my specimens, or name them. Meanwhile I have read of new varieties, and even aberrations described by some of my advisors, and I found it very hard to comprehend the differing positions taken in these instances.

In undertaking to write upon the subject, I have adopted a method which has produced good results in another field, my own profession, dentistry. I sent out a query as to the meaning of the terms Variety, Form and Aberration, and the circumstances under which they should receive special names. I will read the replies. Rev. George D. Hulst says:

A variation is the differing of an individual or a few individuals (in a degree not very strongly marked), from the normal or typical form.

An aberration is a variation where the differing is very decided, and intergrades are wanting, otherwise known as "sports."

A variety is a comparatively broad term as it is ordinarily used —covering race, form, subspecies, and indeed all distinctions below species.

Under this a form is one or more of the variations an insect may take in view of seasonal influences, for example *Grapta fabricii* is a form of *G. interrogationis;* or a sexual difference as *Papilio turnus* from *P. glaucus.*

A race is one or more of the variations an insect takes in the same brood, or in all broods in view of climatic conditions, as for example, *Triptogon occidentalis* I consider a race of *T. modesta.*

There remain the variations which occur in the same insect under the same conditions and the name variety more especially belongs, as for example *Papilio walshii* is a variety of *P. ajax.*

A species is a distinct variation, permanent, supposed to breed true to itself,—without known intergrades with other species.

A subspecies is very nearly like what I call race above, and is where intergrades are known, but are infrequent. Perhaps most would call *Triptogon occidentalis* a sub-species of *T. modesta.*

A sub-variety would be nearly equal to the word form, as explained above. Of course it must always be recognized no line can be sharply drawn; there is no break in Nature. The breaks

which we make are artificial and for convenience only, and none hold in all cases. My list would be :

Genus.—Species distinguished by a type difference in structure.
Sub-genus.—Differing in structure, but less.
Species.—Breeding true to self, and not intergrading.
Sub-species.—Breeding true to self, and rarely intergrading.
Race.—Breeding true, except in intermediate localities.
Variety.—Forms distinct, but intergrading, more or less in any locality.
Sub-variety.—Forms distinct, or not distinct, but the name applying to a variety comparatively infrequent or not marked.
Form.—A seasonal or sexual variation somewhat permanent.
Variation.—An individual variation, infrequent and not generally distinct, and not permanent.
Aberration.—An individual, sport, or variation, very distinct, without intergrades.

Prof. John B. Smith replies: Under the term variety I understand a departure from what may be considered the usual form of an insect, which, while it does not breed true to itself yet at the same time occurs frequently enough to bear a reasonable proportion to the ordinary form, occurring independently of season or of locality. It is to be understood, also, that there is no regular succession of intermediate forms between this variety and the usual form. Where a range of intermediate forms exists I would not consider the extreme entitled to a name, but I would simply rank them as variations; for instance, we have in *Carneades infelix* a form in which we have the full *Noctuid* markings present, the colors well marked and contrasting, and this species varies to a form which is entirely black without any trace of markings whatever. Every intermediate stage between the immaculate and fully marked form is represented, and I do not, therefore, give a name to anything except a species.

Under the term form I understand what may be called a seasonal variety, as where Summer and Autumn, or Spring and Summer broods offer a different appearance in size, color, pattern, etc. This is what is also called a seasonal or a dimorphic form, and these may be named provided it is specified that a seasonal or dimorphic name is intended.

An aberration is a sport, and indicates a monstrosity in some

directions; either in markings, in color, in suffusion, or in the direction of an Albino. This occurs only at rare intervals without any rule either as to season, locality or other permanent cause, and may be due to accident or the result of unusual circumstance occurring at any time during the early life of an insect. An aberration may, under circumstances, become a variety in the course of time if circumstances induce a similar kind of aberration sufficiently often. I have never yet named an aberration, and I do not think I ever will.

I have another term about which you do not ask, and that I include under the name *Race*. Under this term I understand what is practically a geographical variety; that is to say, a form of an insect which breeds true to itself, occurring constantly in one locality and differing in some particulars which are not specific from the same species as it occurs in another locality. We have a good example of Races, as I understand them, in the genus *Satyrus*. An aberration I do not name at all, but simply call attention to the fact that such a one exists. A form, where it is sufficiently marked, is always entitled to a name, if a man chooses to apply one. Personally, I cannot remember that I have ever named a form. Varieties are always entitled to a name, although I apply varietal names very sparingly. It is only where a marked difference exists, such as would be apt to prevent recognition of its relation to the entire species, that I think a varietal name worth giving, in order to call the attention of the student to the fact that a range of variation exists which will put him on his guard against assuming a departure from the type to mean a new species. As I already indicated any departure from the type which is connected with the type by an unbroken series of intergrades is not a variety in my opinion, and I refer you again to the example above cited of the *Carneades*. Your third question it is almost impossible to answer. A specimen being sent me by itself, differing from anything heretofore known to me, would be placed nearest to the species which it most resembled in structural and other characters. If I were to determine it, I would give it that name with a query as to its being a variation or variety, and I would allow the matter to rest that way until further material came to hand. An aberration may be impossible of recognition until an examination of a very large number of specimens indicated its relationship, or unless some distinctive struc-

tural character should refer it to a known species with certainty. Now I wish to call attention to just one thing: in all the discussions on this matter so far as the Lepidoptera are concerned, everything seems to have gone on the question of color and markings; factors which within a limited range are quite constant and worthy of high rank, but which above all other matters are subject to variation and to aberrations. I always examine an insect for structural characters before I determine its rank in any work that I do. I have never yet found, anywhere, two species that are entirely alike in structural characters, and where I find an absolute agreement between two species in all the structural characters I incline to consider them as belonging to the same species, whatever the difference may be in marking or color, until I prove to my own satisfaction that the range of variation in marking departs from what is usual or possible in the genus. I am very much more conservative in the matter of naming varieties than many of our Lepidopterists of the present day, and I may be wrong and they right. I cannot see the use of burdening our lists with a lot of really unmeaning names, like, for instance, all those names applied by Prof. French to the species of *Leptarctia*, and I may cite others that are as poorly based. I think, however, you have my views on the subject at sufficient length.

(To be continued.)

———o———

NOTES ON TYPES OF NORTH AMERICAN GEOMETRINA IN EUROPEAN COLLECTIONS.—II.

By Geo. D. Hulst.

(Continued from page 306, vol. v, Ent. News)

A specimen in the Museum has a label in Dr. Packard's handwriting, *Tephrina modestaria* Pack. It is the same as *T. argillacearia* Pack. I do not know that it was ever described.

Mr. J. Alston Moffat, Curator of the Entomological Society of Ontario, who has examined for me the material of the D'Urban collection, writes me that *Numeria inceptaria* Wlk. 1667, is this same species, and in that case Walker's name has priority. I am much indebted to Mr. Moffat for his determinations, and take this occasion to express my thanks to him.

Thamnonoma tripunctaria Pack. is put by Mr. Warren as a

synonym of *Tephrina lorquinaria* Gn. ii, 101. The remarks under *T. monicaria* Gn. above apply here, as Guenée's type is probably lost. I think Mr. Warren's reference is correct.

The type of *Thamonoma curvata* Grt. is in the Museum, and is put as a synonym of *Phasiane excurvata* Pack., which is a synonym of *Anaitis orillata* Wlk. 1740, which is a synonym of *Aspilates strigularia* Wlk. 1675, and *Anaitis continuata* Wlk. 1445, the latter being the oldest name; *curvata* does not have the basal and middle lines coalescent posteriorly, though they are nearly so, and I have specimens where they do become one. Grote's name can stand for this varietal form.

Psamatodes eremiata Gn., of which the type is in the Museum, has as synonyms—*Tephrina retectata* Wlk. 959, *Tephrina gradata* Wlk. 968, *Tephrina retentata* Wlk. 968, and *Macaria subcinctaria* Wlk. 1655.

Ellopia plagifasciata Wlk. 1508, is *Numeria occiduaria* Wlk. 1016. This is not, in my opinion, the same as *Numeria pulveraria* Hbn.*

The type of *Fidonia truncataria* Wlk. 1034, is much darker than the form usually met with in our collections. It is, however, an arctic form, and among the Geometrina, under arctic conditions, there is a tendency to melanism, as well as to hairiness, and a squamose condition of vestiture.

Tephrina notataria Wlk. 407, *Fidonia discospilata* Wlk. 1034, and *Larentia fidoniata* Wlk., 1183, are the same species, and are also one with *Fidonia bicolorata* Minot.

Azelina aretaria Wlk. 258, is the same as *Caripeta subochreata* Grt. *Caripeta latiorata* Wlk. 1525, and *Caripeta angustiorata* Wlk. 1524, are variations of one species. Mr. Warren does not think *C. aretaria* to specifically distinct, but I am not yet ready to unite it with the others. The amount of material is yet very small for comparison.

Caripeta divisata Wlk. 1525, has as a synonym *Cidaria albopunctata* Morr. The type of the latter is in the Museum.

In the Museum collection Mr. Warren has ranged *Drepanodes olyzonaria* Wlk. 69, *D. bicesaria* Wlk. 73, *D. œmearia* Wlk. 73, *D. puber* Grt. *D. varus* G. & R., *D. æquosus* G. & R., *D. sesquilinea* G. & R. and *D. juniperata* Pack., as one species. The type of *D. puber* is in the collection. *D. olyzonaria* is like *D. æquosus*, *D. bicesaria* and *D. æmearia* are nearly as *D. puber*

Grt. I agree with Mr. Warren's reference. *D. infensata* Gn. i, 68, and *D. ephyrata* Gn. i, 69, I found are the same species, so the oldest name yet known is *D. infensata* Gn.

The synonymy of *Prochœrodes transversata* Dru. I found to be the same as stated by Dr. Packard, namely, *incurvata* Gn., *goniata* Gn., *transmutens* Wlk., *contingens* Wlk., *transposita* Wlk. *Transmutens* and *incurvata* are dark forms, *contingens* is yellowish, *transfindens* is striated and dark spotted.

Oxydia vesulia Cram. has *distichata* Gn. i, 59, and *peosinata* Gn. i, 59, as synonyms. Mr. Warren joins several other names to *vesulia*, but having seen the types of Guenée I do not believe them to be conspecific, as Mr. Warren puts them.

Tetracis aspilata Gn. i, 141, and *T. allediusaria* Wlk. 253, are the same species with *T. crocallata* Gn. i, 141. *T. aspilata* has the cross-line of the hind wings obsolete.

Mr. Warren has established the genus *Ctenotetracis* for *parallelia* Pack. and *trianguliferata* Pack.

Eutrapela ægrotata Gn. i, 141, is not a synonym of *Sabulodes dositheata*, as Dr. Butler seemed to think, and on whose authority I united them; *ægrotata* is our Californian species, and *Ennomos arsesaria* Wlk. is a synonym; *ægrotata* is, however, of *Sabulodes caberata* Gn. i, 45.

Apicia? deductaria Wlk. 237, *Lozogramma atropunctata* Pack. and *Drepanodes fernaldi* Grt. are the same. The type of *D. fernaldi* is in the Museum.

Tetracis pandaria Wlk. 173, is a synonym of *Càberodes majoraria* Gn.

I agree with Dr. Packard that the following are synonyms of *Caberodes confusaria* Hbn. : *metrocamparia* Gn. i, 137, *remissaria* Gn. i, 137, *imbraria* Gn. i, 137, *superaria* Gn. i, 138, *ineffusaria* Gn. i, 138, *floridaria* Gn. i, 139, and *phasianaria* Gn. i, 140. I add as other synonyms: *Caberodes interlinearia* Gn., *C. eldanaria* Wlk. 170, and *C. varadaria* Wlk. 251.

Apicia cayennaria Gn. i, 82, is not the insect known in our catalogues as *Caberodes cayennaria*. It is *Caberodes distycharia* Gn. i, 83. *A. cayennaria* Gn. has not, in my knowledge, ever been taken in the United States.

Napuca orciferata Wlk. 1693, is considerably darker than any specimens I had seen before. It follows the arctic tendency to melanism, but is conspecific with *Phasiane aberrata* Hy. Edw.

and *Aspilates gilvaria*, var. *labrodorata* Moesch.; of *P. aberrata* I have seen the type, and of *labrodorata* I have a typical specimen sent me by Mr. Moeschler.

Azelina honestaria Wlk. 258, and *A. stygiaria* Wlk. sup. 1548, are conspecific with *Azelina hubnerata* Gn.; *stygiaria* is var. *atrocolorata* Hulst. I may as well mention that *Gonodontis peplaria* Hbn., Zutr. 709, 710, is the same insect. The synonymy will thus be expressed:

Azelina peplaria Hbn.
stygiaria Wlk.
atrocolorata Hulst
var. *hubnerata* Gn.
honestaria Wlk.

Caberodes antidiscaria Wlk. 1513, is the same as *C. lentaria* Hulst.

Metanema determinata Wlk. sup. 1551, is the same as *M. carnaria* Pack.

Metanema æliaria Wlk. 260, is a synonym of *M. quercivoraria* A. & S.

Ellopia fiscellaria Gn. i, 133, *E. flagitaria* Gn. i, 133, are one species, *fiscellaria* having the priority. I think *Ellopia? panisaria* Wlk. 163, is synonymous, and Mr. Moffat informs me *E. æqualiaria* Wlk. 164, is also a synonym.

Ellopia pullaria Gn. i, 131, *E. scitata* Wlk. 1510, and *E. invexata* Wlk. 1512, are synonyms of *E. fervidaria* Hbn.

Ellopia athasaria Wlk. 163, *E. siccaria* Wlk. sup. 1547, and *E. seminudata* Wlk. 1508, are the same species.

Mr. Warren places *bibularia* G. & R. and *pellucidaria* G. & R. as synonyms of *E. seminudata* Wlk. 1508. I have not seen the Grote and Robinson types, but taking the figures given Ann. Lyc. Nat. Hist. N. Y., vol. viii, 1867, pl. 15*a*, figs. 8, 9 and 10, *E. bibularia* G. & R. is the same as *E. seminudata* Wlk., but *E. pellucidaria* G. & R. is, as I think, a distinct species. As stated above *E. athasaria* Wlk. is an earlier name than *E. seminudata* for the species.

Ellopia subprivata Wlk. 1509, is a synonym of *Plagodis serinaria* H.-Sch.

Sicya macularia Harr. has as synonyms: *Sicya sublimaria* Gn. i, 105, *S. truncataria* Gn. i, 104, *S. solfataria* Gn. i, 104, *Epione calipusaria* Wlk. 120, and *Epione argyllaria* Wlk. 121.

Aspilates olenusaria Wlk. 1675, is a variety of *A. coloraria* Fab.

Apicia liberaria Wlk. 239, has *Macaria integrara* Wlk. 889, and *A. lintneraria* Pack. as synonyms.

Tephrina unicalcararia Gn. ii, 100, another of the Lorquin insects, is, as a specimen is named in the British Museum, the same as *behrensaria* Hulst. I am as well satisfied with this determination as any, and so it may stand. The insect, however, appears in two quite distinct forms—one rusty ochreous, the other cervinous; the latter may be called var. *behrensaria* Hulst.

Numaria duaria Gn. ii, 135, has as synonyms: *N. hamaria* Gn. ii, 136, *Ellopia amyrisaria* Wlk. 164, *Caberodes agreasaria* Wlk. 252, *Endropia adustaria* Wlk. sup. 1545.

I agree with Dr. Packard as to the synonyms of *Endropia hyperchraria* H.-Sch., viz.: *E. refractaria* Gn. i, 125, *E. lateritiaria* Gn. i, 125, and *E. mestusata* Wlk. 154. To these I add *Azelina fœdaria* Wlk., sup. 1548, and *Macaria? indeclinata* Wlk. 888.

(To be continued.)

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ANT NESTS.

By Frederick Knab.

I have noticed the picture and article, "A Home among the Tree Tops" with interest, and the following observations made about nine years ago on the Amazon may perhaps not be familiar to every one.

Nests, in appearance and size, as described in the above article are very common on the Lower Amazon, only those I examined appeared to be made of mud, and were inhabited by a species of large black ant. Sometimes they are high up in the crotch of a tree; sometimes quite near the ground. Few probably know that the common paroquets rear their young within these ant nests—a most interesting case of intimate relations between widely different animals. The bird drills a hole into the side of the ant-hive, like a woodpecker's in a tree. Inside quite a cavity is scooped out, in which the eggs are laid and hatched out without annoyance from the ants, which continue in possession of their home. It can readily be seen that the ants, who rush forth at

the least disturbance, would be a protection to the helpless young paroquets, but why do the ants suffer these intruders? Once I obtained a set of paroquet's eggs from one of these nests. An Indian climbed up a neighboring tree, and, reaching over with his tercado, broke open the nest—the hole being much too small to introduce the hand—immediately the tree and the ground below was black with ants. The eggs were taken out and caught successfully in my insect net, but not until many of the little demons had buried their jaws in our flesh.

On other occasions I saw the young birds crowded snugly together in their strange home, with beaks wide open for food when they heard one approach. The *Termites*, on the contrary, live in large, irregular, conical mounds, hard as rock, and often ten feet and more high. In the day-time there is no sign of life, but if one enters the forest at night the sight is a beautiful and startling one—the darkness is intense. Here and there in the blackness may be seen clusters of glittering phosphorescent light; these are the *Termite* hills. No doubt the light proceeds from the insects as the particles of the light mass move and change. The light is greenish and soft, and the effect is indescribable. In marked contrast is the glowing red light of the *Elaters* as they dash rapidly through the foliage.

BLAPS SULCATA, a common species in Egypt, is made into a preparation which the Egyptian women eat with the view of acquiring what they esteem a proper degree of plumpness! The beetle they broil and mash up in clarified butter; then add honey, oil of sesame, and a variety of aromatics and spices pounded together. Fabricius reports that the Turkish women also eat this insect, cooked with butter, to make them fat. He also tells us that they use it in Egypt and the Levant, as a remedy for pains and maladies in the ears, and against the bite of scorpions. Carsten Niebuhr also mentions this curious practice of the women of Turkey, and adds, the women of Arabia likewise make use of these insects for the same purpose, taking three of them, every morning and evening, fried in butter.—*Cowan's Curious Facts.*

ON my way to church, Sunday evening, September 9th, I noticed as I approached an electric light which hung over the middle of the street a column of moths projected outward and downward from the lamp for a distance of three feet or more. It was brilliantly illuminated, those farthest away being somewhat in the shadow of those nearer the lamp. Though many were fluttering about outside of the main column, the edges were plainly marked, and it attracted some attention.—H. E. VALENTINE.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JANUARY, 1895.

THE SIXTH VOLUME.

WITH the present number the NEWS begins its sixth volume. It is not very old, but its newness is wearing off, and it feels that it has a career, and that it has come to stay. Our efforts have been crowned with success, and there is every reason why the NEWS should still grow and prosper. In the beginning we had our doubts about its life, as it would not have been the first entomological journal to die. We feel that our subscribers and friends have aided us greatly, and it has been this that has encouraged us to do our best for them. We frequently receive kind words in relation to the NEWS, and these words are very gratifying. The journal is to be continued and enlarged if necessary, and we hope to receive efficient support so that this may be done. Why not have a forty page illustrated monthly devoted to entomology? It can be done with your help, and it would be a grand thing. Think of it, four hundred pages a year! Aid us in getting the necessary subscribers and we will do the rest. Tell your entomological friends what we would like to do and we may do it. We wish you all a happy New Year, and feel sure that your interest in natural history will be of benefit to you in many ways; it means relaxation from the cares of life and recreation.

OUR local physician showed me yesterday a lizard about six inches long apparently dried and coated over with wax entirely. He said that it was found in a Bee Tree near here. The bees had coated it over and then built their cells against it and on it. Possibly the lizard intruded on the new colony in the log and they stung it to death and then coated it over to prevent decomposition.—J. T. MONELL.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

PARASITIZED LARVÆ.—Of *Nadata gibbosa*, which generally yield a fair average of normal pupæ, I had negative results this year, 1894. Nineteen larvæ collected late in July produced only one pupa. They reminded me of those promising much and returning little. With *Hyparpax aurora* had better success. Twenty-nine larvæ of first brood yielded ten pupæ, but only one imago emerged in August—the others in all probability going to hibernate. Another collector related to me a similar experience with *H. aurora*.—Dr. R. E. KUNZE.

NOTE ON NEMATUS SALICUM (Ckll.)—A short note appears necessary to clear up the synonymy of this insect. As is explained in Tr. Am. Ent. Soc. xx, pp. 345–346, I described the larva as *Messa salicum*, and Mr. Ashmead later described the imago as *Messa salicis*. Those who maintain the genus *Messa* will probably prefer to call the species *M. salicis* Ashm., but Dalla Torre, in his Cat. Hymenop. vol. i (1894), p. 257, sinking *Messa* under *Nematus*, alters the name of our species to *Nematus salicicola*, because there is a *Nematus salicis* Linné. In view of the previously published named *salicum*, this was unnecessary, and the proper synonymy is apparently *Nematus salicum* Ckll. (= *salicis* Ashm., not L., = *salicicola* D. T.)—T. D. A. COCKERELL.

Mr. WM. H. ASHMEAD, in "Insect Life," vol. vii, No. 1, p. 27, identifies a *Hemerobius* from Mississippi as *H. humuli* Walk.; then, accepting Hagen's doubt as to its identity with the European species of that name, he calls the American specimens *H. gossypii* Ash. But McLachlan, who completely reviewed Walker's Hemerobidæ from the types, says of *H. humuli* (Brit. Neurop. Plan., p. 181), "North American specimens do not differ from the described European form." So, if Mr. Ashmead's species agrees with Walker's form, *H. gossypii* is another addition to the already long list of synonyms of the common *Hemerobius humuli*. *Cæcilius mobilis* Hagen, which was described from a damaged specimen from Cuba, is also recorded by Mr. Ashmead from Mississippi. I doubt if any-

body without a complete collection of Cuban Psocidæ could definitely identify this species from the imperfect description; and to record it from Mississippi I should say was pure guess-work.—NATHAN BANKS.

TRANSLATION FROM PLINY, IN ANTIQUE ENGLISH. The silk-worm.—"They build their nests of earth or clay, close sticking to some stone or rock, in manner of salt; and withall so hard, that scarcely a man may enter them with the point of a spear. In which they make also wax, but in more plenty than bees; and after that bring forth a greater worme than all the rest before rehearsed. These flies engender also after another sort namely, of a greater worme or grub, putting forth two hornes after that kind; and these be certain canker wormes. Then these grow afterwards to be Bombilii, and so forward to Necydali; of which in six months after come the silk-wormes Bombyces. It is commonly said, that in the Isle of Cos there will be certain silk-wormes engendered of flowers, which by means of river showers are beaten downe and fall from the cyprus tree, terebinth, oke and ash; and they soon after doe quicken and take life by the vapor arising out of the earth. And men say, that in the beginning they are like unto little butterflies, naked, but after awhile, being impatient of the cold, are overgrowne with hairs: and against the winter, arme themselves with good thick clothes; for being rough-footed, as they are, they gather all the cotton downe of the leaves which they can come by, for to make their fleece. After this they fal to beat, to felt and thicken it close with their feet, then to card it with their nailes; which done they draw it out at length, and hang it between branches of trees, and so kembe it in the end to make it thin and subtill. When al is brought to this passe, they enwrap and enfold themselves in a round bal and clew of the thread, and so nestle within it. They are then taken up by men, put in earthen pots, kept there warme, and nourished with bran, untill such time as they have wings according to their kind; and being thus well clad and appointed, they be let go to do other businesse."

THE SAUVA ANT.—Dr. Elliot Coues sends us the following extract from a letter which he recently received from Dr. Alfred Alexander, of Minas-Geraes, Brazil, which is well worth publishing:

At Capocabano on the sea-shore just outside of the city of Rio, we had a stable made of planks roughly put together. The Sauva, which were very numerous in the neighborhood, were accustomed to climb up the outside of this structure and to pass between the planks into the manger, whence they came out laden with grains of Indian corn. One day I watched them descending with their loads, and I observed that at a certain entering angle a solitary ant was stationed who had undertaken the duty of helping each separate comer to pass the difficult corner with his load.

The Sauva are very destructive to the coffee trees and strip them of their leaves. This is an acquired habit, for in the wilder parts of the State of Minas (the Sertae) they touch neither coffee trees nor Indian corn, probably preferring other plants. It is remarkable, however, that

in the coffee plantations of the cultivated districts they spare the trees that grow in or near their nests. In this they are like foxes that abstain from molesting neighboring hen-roosts.

A friend of mine, Commendador Pereira, of Rio, tells me that he once witnessed the formation of a living bridge of Sauva ants. The insects arrived at the edge of some running water with their load of leaves, which they deposited on the ground. They then formed a chain, ant holding on to ant, and while the individual at the lower end seized tightly a blade of grass, or some other object at the water's edge, the rest allowed themselves to be floated out by the stream. They were not at first long enough to reach the opposite side and were thus swept round again to the same bank lower down. Other ants now joined to lengthen the pontoon, and the same manœuvre was repeated some two or three times until the outer ant was enabled to obtain a hold on the opposite bank. The bridge constructed, the workers passed over with their loads and then the pontoon-makers cast loose from the first bank and were carried by the current to the second, where, in their turn, they took up their loads and followed their companions. The ants that formed the bridge assumed oblique positions and swam against the stream. I made a careful note of Pereira's statement, but I have met with no other observer of the same fact. As a general rule, the Sauva does not like water, and trees are sometimes preserved from their attacks by surrounding them with a ditch. Nevertheless, Sr. Pereira is a trustworthy man.

HAVING been connected with the Gipsy Moth Commission for the past season of 1894, perhaps some of the readers of the NEWS, would like to know the routine of this gigantic work. Prof. Howard, the United States Entomologist, paid a visit in the Summer to Malden, the headquarters of the Agricultural Department Massachusetts Gipsy Moth Commission, and spent a day or so, looking over the work with some of the officials, and I see in "Insect Life," vol. vii, No. 2, he speaks of this work as "one of the most remarkable pieces of work in economic entomology." A territory covering a space of about one hundred square miles is infested with the Gipsy (*Ocneria dispar*). Three hundred and twenty-five thousand dollars have already been appropriated, and nearly all spent. The confidence of the Massachusetts people seems to be doubtful, but any one knowing the fearful ravages that have been created by such a voracious caterpillar as the Gipsy, and seeing the work carried on as I have, cannot help but be most favorably impressed with the admirable manner in which the attack has been made upon this insect, and the grand results accomplished. Sorry, indeed, will the people of the State be should they stop it, and it will be almost criminal upon the part of those having the legislative power, should they discontinue it, for the money already spent will be deliberately thrown away, and the Gipsy caterpillar will, in a few years, be beyond the control of the nation. It would soon be out of the State, and into all the surrounding States, creating a havoc from which the people would not soon get over, for just as soon as the State drops this work

then provisions of all and every kind will be so high that the people will come upon the legislators for such a foolish thing as stopping a work which is in such a condition that it is under control, and if not exterminated, can be brought down to a condition where it can be handled by a small force of men.

The infested territory is divided into three divisions or sections, each division has a superintendent, and he in turn has a force of men under him to cope with the work in his particular territory. He divides his men into gangs, with an inspector or foreman at its head. Over and above the whole is a manager or field director with an assistant, and in the busy caterpillar season they employ other men to oversee and report any negligence of work by the inspector or men. There are some very funny and amusing features connected with it, and some of those contemptable anonymous letter writers. For my part, I have never known any one to write an anonymous letter to be other than a liar and a sneak. In the Winter and early Spring the men destroy the clusters of eggs with creasote and fire, when the larvæ appears they spray with poisoned solutions. Also place bands of burlap around and about the trees, and the men examine these every day and kill by hand the caterpillars which will congregate under them. This is done by means of very course bagging cutting into strips and wound about the trunk of the tree like a bandage, about four or five feet from the ground, so you can readily see what a gigantic undertaking it is, but for all that, it has been and is being done most thoroughly. So how foolish for one day to stop this work because some people who do not know what insects are other than BUGS, and object to the public purse being drawn upon, and yet they, as a rule, are the very ones who do not contribute one cent towards its support, and some of them draw very heavily upon it (the public purse) as so-called legislators.—H. G. WHITE, Malden, Mass.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

1. PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1894.—A proposed classification of the fossorial Hymenoptera of North America, W. J. FOX.

2. LE NATURALISTE. Paris, Nov. 1, 1894.—Habits and metamorphoses of *Scolia hirta* Schrank, Capt. Xambeu.—November 15th. Diagnoses of American Coleoptera, M. Allard.

3. ENTWICKELUNG DER RAUPENZEICHNUNG und Abhängigkeit der letzteren von der Farbe der Umgebung. Inauguraldissertation zur Erlangerung der philosophischen Doktorwürde, etc. Universität zu Kiel. Von Christoph Schröder. Berlin, R. Friedländer & Sohn, März, 1894. 71 pp., 1 pl.

4. BERICHTE DES NATURWISSENSCHAFTLICHEN VEREINES ZU REGENSBURG, iv, 1894.—Architecture of the Phryganidæ, Dr. O. Hofmann, 1 pl.

5. PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1894, pt. iii, Oct. 1, 1894.—On the spiders of the island of St. Vincent ii, E. Simon.

6. REVUE BIOLOGIQUE DU NORD DE LA FRANCE, vii, 1. Lille, October, 1894.—Remarks on the organization and comparative anatomy of the last segments of the bodies of the Lepidoptera, Coleoptera and Hemiptera, A. Peytoureau, 7 pls., figs.

7. COMPTE RENDU. L'ACADEMIE DES SCIENCES. Paris, Nov. 5, 1894. —On the formation of new colonies in the lucifugous Termite (*Termes lucifugus*), J. Perez. Defense of the organism against parasites in insects, L. Cuenot.—November 12. Biological observations made on the wandering cricket (*Schistocerca peregrina* Oliv.) during the invasions of 1891, 1892 and 1893 in Algeria, repeated copulation, oviposition, J. K. d'Herculais. On the swarms of *Termes lucifugus*, J. Perez.

8. ACTES DE LA SOCIETE SCIENTIFIQUE DU CHILI, iv, 2. Santiago, Aug. 22, 1894.—The twentieth neotropical *Aspidiotus*, T. D. A. Cockerell.

9. ZOOLOGISCHER ANZEIGER. Leipsic, Nov. 5, 1894. Some words to Dr. C. Hilger [on the abdomen of Coleoptera], C. Verhoeff. Anatomy of the venomous apparatus of the Ichneumonidæ, L. Bordas.—November 19., E. Schmidt's labial palpi, Dr. N. Leon. A new developmental stage of *Polydesmus*, Dr. C. Verhoeff.

10. BOLETIN DE LA ACADEMIA NACIONAL DE CIENCIAS EN CORDOBA, xiii, 2. Buenos Aires, July, 1893.—Argentine Dipterology: Chironomidæ, F. L. Arribalzaga.

11. JAHRBUCHER DES NASSAUISCHEN VEREINS FUR NATURKUNDE, xlvii. Wiesbaden, 1894.—Contributions to the biology of the Noctuæ, W. Caspari 2nd. Biological notes on *Acronycta alni* id.

12. THE CECROPIAN. (Monthly report of the Henry Edwards Entomological Chapter of the Agassiz Association.) Edited by the secretary [William L. W. Field]. Milton, Mass. Published by the Chapter, November, 1894.—A list of butterflies captured at Hartford, Conn., S. N. Dunning. A list of butterflies of Guilford, New Haven County, Conn., W. L. W. Field and D. G. Field. A list of the Lepidoptera–Rhopalocera

of east, west and south Bridgewater, Mass., W. L. Tower. A partial list of Lepidoptera observed at Salem, Columbiana County, Ohio, M. L. Barker. Printed by a duplicating process.

13. A TEXT-BOOK OF INVERTEBRATE MORPHOLOGY by J. Playfair McMurrich, M.A., Ph.D. Professor in the University of Michigan. New York, Henry Holt & Co., 1894, pp. viii, 661; 291 figs. Arachnida pp. 435-468. Tracheata pp. 469-530.

14. JENAISCHE ZEITSCHRIFT FUR NATURWISSENCHAFT, xxix, 1, Sept. 20, 1894.—Contributions to the phylogeny of the Arachnida: on the position of the Acarina; the so-called Malpighian vessels and the respiratory organs of the Arachnida, J. Wagner.

15. THE JOURNAL OF THE CINCINNATI SOCIETY OF NATURAL HISTORY, xvii, 3, October, 1894.—Studies of the development of *Fidia viticida* Walsh, with descriptions of one new genus and two new species of Hymenoptera by W. H. Ashmead, F. M. Webster, 1 pl. The preparation and care of insect collections, C. Dury.

16. ARCHIVES DES SCIENCES PHYSIQUES ET NATURELLES (3), xxxii, 10. Geneva, Oct. 15, 1894.—Polymorphism and ergatomorphism of ants, Dr. A. Forel.

17. THE ENTOMOLOGIST'S RECORD. London, Nov. 15, 1894.—Random notes on *Zygæna exulans* and its varieties, J. W. Tutt. Portrait of the members of the Lancashire and Cheshire Entomological Society.

18. THE KANSAS UNIVERSITY QUARTERLY, iii, 2. Lawrence, Kans., October, 1894.—The prothorax of butterflies, May H. Wellman, figs. American Platypezidæ, W. A. Snow, 1 pl.

19. JOURNAL DE L'ANATOMIE ET DE LA PHYSIOLOGIE, xxx, 5. Paris, September-October, 1894.—Contribution to the study of the sub-intestinal nervous system of insects, A. Binet, 4 pls.

20. THE BRITISH NATURALIST. London, Nov. 15, 1894.—Some curious aquatic larvæ, G. Swainson, 1 pl. The sexual distinctions of insects, C. W. Dale. Synonymic list of the genera and species [of British Araneidea], with synonyms of the latter (cont.), Rev. F. O. Pickard-Cambridge.

21. THE AMERICAN MONTHLY MICROSCOPICAL JOURNAL, xv, 11. Washington, November, 1894.—Keys to the genera of Pediculidæ and Mallophagidæ, H. Osborn.

22. ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE (3). ii, 3. Paris, 1894.—Studies on the heart of some Orthoptera (preliminary communication), A. Kowalevsky. Preliminary note on the distribution of the sexes in the cells of the wasp, P. Marchal.

23. NATURWISSENSCHAFTLICHE WOCHENSCHRIFT. Berlin, Nov. 25, 1894.—The protection of animals in nature, Dr. F. Kienitz-Gerloff, figs.

24. KNOWLEDGE. London, Dec. 1, 1894.—The glow-worm, E. A. Butler, figs. The industry of insects in relation to flowers, Rev. A. S. Wilson. The web of the garden spider, E. A. Butler, fig.

25. PSYCHE. Cambridge, Mass., December, 1894.—Convergence and pœcilogony among insects, A. Giard (transl. from Compt. Rend. Acad. Sci. Paris, by H. Osborn). A cone-like Cecidomyiid gall on Bigelovia, C. H. T. Townsend. Preparatory stages of *Sphinx vashti* Strecker, H. G. Dyar. A check-list of African Coccidæ, T. D. A. Cockerell. Notes upon *Toxoneuron*, W. H. Patton. Notes on the Orthoptera of Penikese and Cuttyhunk, A. P. Morse.

26. MEMOIRES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, ii Brussels, 1894. The Melolonthidæ of the palæarctic and oriental regions in the Royal Museum of Natural History in Brussels, E. Brenske.

27. ANNALES of the same, Nov. 3, 1894.—Revision of the species of the genus *Rhaphidorrhynchus* Schoenherr, A. Senna.

28. THE ENTOMOLOGIST. London, December, 1894.—The North American species of *Ingura*, J. B. Smith. On a *Lecanium* from Rochester, N. Y. (U. S. A.), considered identical with *L. juglandis* Bonché, T. D. A. Cockerell. Notes on "assembling," with some general remarks on the senses in Lepidoptera, J. Arkle. On *Parnassius phœbus* (Fab.) = *delius* (Esp.) and *P. smintheus* (Doubleday), J. Watson. Additions to the list of British Lepidoptera during the past ten years, Anon.

29. THE ENTOMOLOGIST'S MONTHLY MAGAZINE. London, December, 1893.—The British species of the genus *Psyche* and its allies (cont.), C. G. Barrett. The new "nickel pin," H. G. Knaggs.

30. REPORTS OF OBSERVATIONS AND EXPERIMENTS in the practical work of the Division, etc., U. S. Dep't Agric. Div. Ent. Bull. No. 32. Washington, 1894.—Report on injurious insect in Nebraska and adjoining districts, L. Bruner. Report on some injurious insects of California, D. W. Coquillett. Report of entomological work in Oregon and California; notes on Australian importations, A. Koebele. Report on the insects of Missouri for 1893, M. E. Murtfeldt. Insects of the season in Iowa in 1893, H. Osborn. Report on insects injurious to forest trees, A. S. Packard.

31. INSECT LIFE, vii, 2. Washington, October, 1894.—[Received at Philadelphia, Nov. 20, 1894]. Sixth annual meeting of the Association of Economic Entomologists: A brief account of the rise and present condition of official economic entomology, L. O. Howard. Bisulphide of carbon as an insecticide, J. B. Smith. Report of committee on coöperation among station entomologists. Spraying without a pump—preliminary notice, J. M. Aldrich. Notes on insecticides, C. L. Marlatt. Some observations on new and old insecticides and their combination with fungicides, B. T. Galloway. Spraying with arsenites *vs.* bees, F. M. Webster. Economic entomological work in the parks of New York city,

E. B. Southwick. The wood leopard moth in the parks of New York city, id. Work in economic entomology at the University of Kansas for the season of 1894, F. H. Snow. Notes on some discoveries and observations of the year in West Virginia, A. D. Hopkins. The eastern occurrences of the San José scale, L. O. Howard. The San José scale in New Jersey, J. B. Smith. Mealy bugs and their allies, G. C. Davis. The pear-tree Psylla in Maryland, C. L. Marlatt. Notes of the year in New Jersey, J. B. Smith. Special economic insects of the season, G. C. Davis. Additional notes on the strawberry weevil, its habits and remedies, F. H. Chittenden. Notes on the insects of north Idaho, J. M. Aldrich. Insects of the year, F. M. Webster. Notes from N. Mexico, T. D. A. Cockerell. Some experience with mosquitoes, H. E. Weed.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper was published; * denotes new North American forms.

THE GENERAL SUBJECT.

Cuenot 7, McMurrich 13, Dury 15, Binet 19, Dale 20, Kienitz-Gerloff 23, Wilson 24, Giard 25, Knaggs 29, Bruner 30, Coquillett 30, Koebele 30, Murtfeldt 30, Osborn 30, Packard 30, Howard 31, Smith 31 (two), Aldrich 31 (two), Marlatt 31, Galloway 31, Webster 31 (two), Southwick 31 Hopkins 31, Davis 31, Cockerell 31.

ARACHNIDA.

Simon 5*, Wagner 14, Pickard-Cambridge 20, Butler 24.

MYRIAPODA.

Verhoeff 9.

ORTHOPTERA.

d'Herculais 7, Kowalevsky 22, Morse 25.

NEUROPTERA.

Hofmann 4, Perez 7 (two), Osborn 21, Marlatt 31 (in paper on Psylla).

HEMIPTERA.

Peytoureau 6, Cockerell 8, 25, 28, Leon 9, Osborn 21, Snow 31, Howard 31, Smith 31, Davis 31, Marlatt 31.

COLEOPTERA.

Allard 2*, Peytoureau 6, Verhoeff 9, Webster 15, Butler 24, Brenske 26, Senna 27*, Chittenden 31.

DIPTERA.

Arribalzaga 10, Snow 18*, Swainson 20, Townsend 25, Weed, 31.

LEPIDOPTERA.

Schröder 3, Peytoureau 6, Caspari 11 (two), Dunning 12, Field & Field 12, Tower 12, Barker 12, Tutt 17, Wellman 18, Dyar 25, Smith 28, Arkle 28, Watson 28, Anon 28, Barrett 29, Southwick 31.

HYMENOPTERA.

Fox 1, Xambeu 2, Bordas 9, Webster 15, 31, Ashmead 15*, Forel 16, Marchal 22, Patton 25.

Doings of Societies.

PHILADELPHIA, Dec. 11, 1894.

A stated meeting of the Feldman Collecting Social was held this evening at the residence of Mr. H. W. Wenzel, 1509 S. Thirteenth Street. Members present: Messrs. Seeber, Dr. Castle, Johnson, E. Wenzel, Boerner, H. W. Wenzel, Fox and Schmitz. Honorary members: Prof. John B. Smith and Dr. Henry Skinner; visitor, Mr. C. H. Roberts. Meeting called to order at 9.30 P.M., vice-president Seeber presiding. Mr. Roberts read the introduction to his paper on the genus *Dineutes*, also exhibiting his collection of the same, together with a number of sketches illustrating some of their characteristics, stating that his collection represented all the known species, also containing two new species, *nigrior* and *hornii*. In concluding this interesting communication he said the paper would be completed for publication very shortly. By request he also explained his method of collecting *Elmis*. He used for the purpose a piece of cheese cloth about 2 x 2 feet long, which is spread across the stream, two ends of the cloth being weighted down, then disturbing the bed of the stream a few feet above; this causes the *Elmis* to cling to the cloth as they are washed down stream. To demonstrate the usefulness of this plan he stated where he had, on one occasion, in agitating a space of about three feet, noticed that they accumulated so rapidly that they began to immediately wash off; he at one gathered up the cloth and began counting them; when his count reached about 700 specimens he tired and quit; this find occupied one and a half hours. Upon being questioned regarding the number of species in a find, he stated they generally represented from three to five. This was followed by a discussion as to the best method for freeing specimens from grease and retaining the color. It was generally conceded that first immersing them in hot water and then in gasoline had been generally found the most satisfactory.

Mr. Fox made some remarks, accompanied by black-board sketches, on the genus *Crabro*, on which he has been working, preparatory to monographing the species. Firstly, *Crabro* may be divided into two sections or divisions, by the sculpture of the mesopleuræ and the presence or absence of a crest or ridge on the epimerum mesopleuralis. In the first section the mesopleuræ are simply punctured and their epimerum

never crested; while in the second section the mesopleuræ are always more or less striated, and their epimerum distinctly crested. Ten groups constitute the first section, and are separated on the form of the first abdominal segment, position of ocelli, and shape of pygidium. The old genus *Rhopalum* leads off with the first segment of abdomen petiolate and nodose at apex, followed by several groups, the form of their first segment grading into those groups in which the first segment is sessile with the second. The old genera, *Blepharipus* and *Thyreopus*, end the first section and show their relation to the second section by the presence of a small pointed prominence on the epimerum mesopleuralis at the same point where the crest is situated in the species of the second section. The ♂ antennæ in this section offer excellent characters for separating the various groups, either being simply clavate, non-dentate, or the first four joints of flagellum are strongly dentate beneath; again the sixth joint of flagellum is deeply emarginate at base, and in one or two groups is in addition strongly produced at apex beneath. The fore tarsi of the male is frequently flattened and dilated, while in other groups they are of the usual form. A number of the old species will be reduced to the synonymy, inasmuch as the sexes of one species have in several cases been described under different names, but this reduction will be more than equaled by the addition of the new species. No further business being presented the meeting adjourned to the annex for refreshments.

THEO. H. SCHMITZ, *Secretary.*

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

At a business meeting held Dec. 10, 1894, the following officers were elected to serve for the year 1895:

Director, G. H. HORN, M.D.
Vice-Director, CHAS. S. WELLES.
Recorder, HENRY SKINNER, M.D.
Treasurer, EZRA T. CRESSON.
Conservator, HENRY SKINNER, M.D.
Publication Committee, JAS. H. RIDINGS, C. W. JOHNSON.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

Biological Notes on Some Colorado Coleoptera.*

By CARL F. BAKER.

In the following notes, unless otherwise stated, the locality is to be understood as Fort Collins.

* From the fifth circulating report of the Say Memorial Chapter of the A. A. See ENT. NEWS, vol. v, p. 18.

Hippodamia convergens Guer. and *H. sinuata* Muls.—Parasitized individuals of these species were found adhering to leaves of cabbage during the early part of September. A specimen of *Euphorus sculptus* Cr. emerged from *H. sinuata* on September 20, and from a *H. convergens* on September 28.

Scymnus collaris Mels. (Det. through Riley)—Larvæ found among plant lice on *Oenothera biennis* August 15, produced beetles September 10.

Epilachna corrupta Muls.—The life-history, etc., of the "Bean Beetle" has been quite fully discussed in Bull. 19 of the Colo. Exp. Station. Lima beans are scarcely touched, and some kinds of string beans are not injured nearly as much as others. On August 18, eggs, larvæ in all stages, pupæ and beetles, were found in great abundance.

Hydnocera longicollis Ziegl. (Det. through Riley)—A specimen appeared during July in a breeding-cage containing galls of *Euura s-nodus* which had been collected early in the Spring.

Lema trilineata Oliv.—Larvæ nearly mature were found in abundance on *Physalis virginiana* June 24. These pupated June 30, the beetles emerging July 25.

Saxinis omogera Lac. (Det. through Riley)—A number of cocoons of this species were found under a stone in the foot-hills west of Fort Collins May 20. They were attached to a little stick and looked like buds on a twig. The beetles emerged from June 8 to June 20.

Chrysomela exclamationis Fab.—Larvæ common in the involucres of flowers of *Helianthus annuus* July 24. Began pupating July 27. Beetles emerged September 7.

Chrysomela flavomarginata Say.—Eggs were found on the dead stems of *Artemisia dracunculoides* early in the Spring. May 20 the eggs hatched, the young larvæ feeding freely on the *Artemisia*. Attained imago state in July.

Gastroidea dissimilis Say.—Eggs, and larvæ in all stages very common on *Rumex crispus* May 24. First pupæ appeared May 30, these giving imagos ten days later.

Lina scripta Fab.—Larvæ abundant on young cottonwood sprouts June 29. Beetles began emerging July 11.

Trirhabda convergens Lec.—Larvæ were taken on *Bigelovia*, June 18, at Dolores, by Prof. Gillette. These produced beetles by July 5.

Galeruca marginella Kirby. (Det. through Riley)—Larvæ mining in leaves of *Chenopodium* June 20. Pupated, giving beetles on July 5

Microrhopala vittata Fab.—A very common beetle in this locality. Larvæ mine leave of *Solidago*. May 10 were copulating and depositing eggs. By July 2 patches of the *Solidago* looked white and dead. Beetles began emerging July 19.

Cassida nigripes Oliv. (Det. through Riley)—Larvæ on *Convolvulus sæpium* July 2. Pupated July 9, the beetles emerging July 19. From a pupa a *Tachina* larva emerged and pupated July 12, the fly appearing July 19.

Bruchus fraterculus Horn. (Det. through Riley)—In 1892 a large proportion of the seeds of *Glycyrrhiza lepidota* in many localities were infested by these beetles. On June 6 many beetles made their appearance. There also appeared numerous specimens of three parasites: *Bracon xanthostigma* Cr., *Eurytoma* sp., and a *Pteromalid.*

Mordellistena morula Lec. (Det. through Riley)—Laavæ very common during Winter in stems of *Iva xanthifolia.* Stems gathered April 14 contained pupæ. Beetles emerged May 9 to June 9, and with them numerous specimens of *Cremastus mordellistenæ* Ashm. mss., and *Tetrastichus* sp.

Anthonomus elongatus Lec. (Det. through Riley)—Bred from a very curious polythalamous twig gall on *Bigelovia,* collected at Dolores, June 19 by Prof. Gillette. Beetles appeared July 19. Probably inquilinous in the galls. A large number of parasites of four species were also obtained.

Anthonomus scutellaris Lec.—Reared in considerable numbers from wild plums, the beetles emerging September 3.

Anthonomus squamosus Lec.—Larvæ common in heads of *Grindelia squarrosa* during last of September, beetles emerging during first of Oct.

The parasitica mentioned in the above notes were determined by Mr. Ashmead.

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A NEW PHÆGOPTERA FROM MEXICO.

By W. SCHAUS.

Phægoptera masoni sp. nov.—Antennæ black. Head, collar and thorax orange; a black spot anteriorly on the patagiæ. Abdomen orange; underneath with a lateral and some transverse black bands. Primaries above orange; at the base a large, light gray space, crossed by black veins and containing on the costal margin an orange spot edged with black; a broad, median gray band bordered on either side with black and crossed by black veins; at the end of the cell a broad gray spot extending to the costal margin, and also edged and streaked with black; the outer margin very broadly yellowish, with the veins black. Underneath yellow, with all the markings black instead of gray, and a submarginal black shade. Secondaries above and below orange-yellow. Exp. 70 mm.

Hab.—Jalapa, Mexico.

In the collection of Mr. J. T. Mason, after whom I name this fine species.

———o———

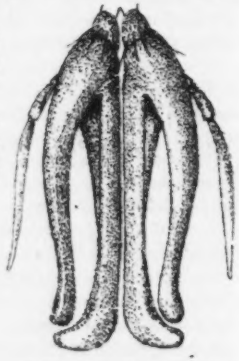
A NEW TACHINID WITH REMARKABLE ANTENNÆ.

By S. W. WILLISTON, M.D.

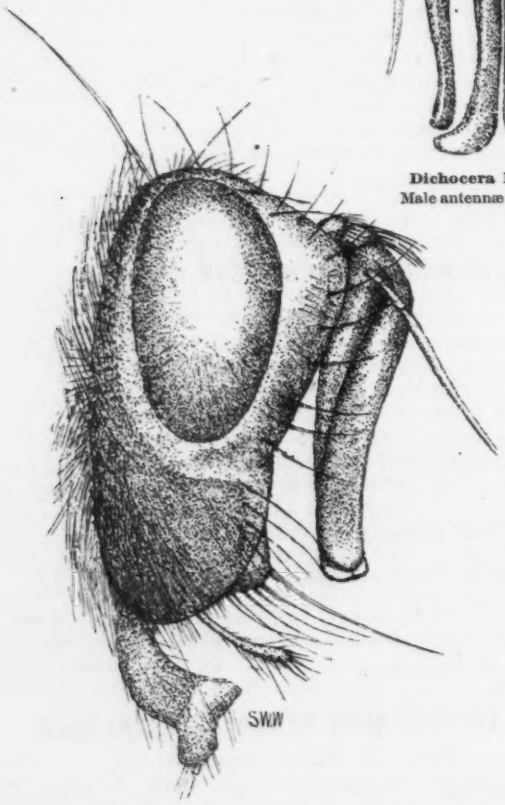
Some years ago* I described, under the name *Talarocera* (which Brauer and Bergenstamm persist in calling *Talacrocera*),

* Entom. Amer. vol. iii, p. 151.

a genus of South American Tachinidæ with remarkably developed antennæ in the male. Very recently I have received from Prof. Aldrich, who is so favorably known for his excellent work in Diptera, a number of specimens belonging to another genus of the same family, the males of which have antennæ quite as remarkable as those



Dichocera lyrata Will.
Male antennæ from in front.



Dichocera lyrata—Head of male.

of *Talarocera*.

I can find no reference to such a structure as is described and figured herewith, and am constrained to regard the specimens as representatives of a new and peculiar genus. Its nearest ally among the described forms seems to be *Nemoræa*, from which, however, the female will be at once distinguished by the much elongated row of frontal bristles and the peculiarly light colored antennæ. It is difficult to describe the structure of the male antennæ in brief language, and I will therefore refer the reader to the figures here given, which have been carefully made. The first two joints are very short, while the third is extraordinarily elongated and split near the base into two nearly equal divisions, the inner one of which is straight and dilated at its tip into a boot-like extremity. The outer branch arises from in front of the base, and is curved outward and then inward, the slightly everted extremity resting upon the toe of the boot. Altogether, the figure shown in front view is not unlike that of a lyre. The arista is attached to the inner branch near its origin, and is very distinctly jointed. The light yellow color of the antennæ adds to their peculiar appearance.

What the function of such a remarkably developed sexual peculiarity is I cannot conjecture. It is in this family, as a whole, that we find the most highly specialized antennæ, and frequently the male antennæ are different from those of the female. In a few instances I have observed the males when at rest alternately raising and depressing the antennæ with a see-sawing motion.

Aside from the antennæ, the structural characters of this fly are as follows:

Dichocera gen. nov. ♂.—Front broad, gently and evenly convex; on either side a row of frontal bristles, which extend down on the sides of the face to opposite the lower margin of the eyes. Two orbital, proclinate bristles present. Eyes oval, their length equal to only a little more than one-half the height of the head; clothed with moderately long, not abundant pile. Face much receding; median excavation broad; sides of the face narrow, bare, except for the row of descending frontal bristles. Cheeks very broad, hairy; near the front part with a vertical row of bristles a little removed from the facial margin. Vibrissal bristles situated almost immediately upon the oral margin. Occipital orbits narrow, with a row of rather small bristles upon the upper half. Palpi slender, slightly thickened at the extremity. Abdomen oval and convex; second segment with a pair of marginal bristles, the third with both marginal and discal bristles. Claws and pulvilli small; first posterior cell narrow and narrowly open, the apical cross-vein oblique, terminating a little distance before the tip

of the wing; the distance from the posterior cross-vein to the angle is not more than a fourth or a fifth of the length of the vein between the cross-veins; angle with a stump of a vein.

♀.—In the female the face is less retreating, the sides are broader, the fovea narrower, the vibrissæ are situated a little distance above the oral margin, the eyes are more sparsely pilose, and the front tarsi are flattened. The two orbital bristles are present, as in the male. The antennæ reach a little below the middle of the face; the third joint is four or five times the length of the second joint, of nearly equal width throughout, and obtusely pointed at the tip. In some specimens the third antennal joint shows a slight projection near the proximal end in front, as though corresponding to a rudiment of the elongated process of the male. The first two joints of the arista are shorter than in the male, and of nearly equal length.

Dichocera lyrata n. sp. ♂♀.—Black; the sides of the front and face, and the narrow inferior orbits gray pollinose, but variable in different reflections, the shining black ground-color showing through. Frontal stripe broad, reddish or brownish; cheeks black, not shining, in some reflections showing a brownish pruinosity; clothed with black hairs; near the front part with a vertical row of bristles not far from the facial margin. Antennæ wholly light reddish yellow. Palpi reddish yellow; occiput gray pollinose, clothed with abundant light gray hair. Mesonotum gray pollinose, but variable in different reflections, leaving four distinct, shining black stripes. Scutellum gray pollinose, variable, the apex slightly reddish; its margins with four long bristles. Abdomen shining black, the anterior part of each segment broadly gray pollinose, but very variable in different reflections; distal part of the fourth segment, sometimes nearly all of it and the hypopygium, yellowish red. Tegulæ nearly white. Wings grayish hyaline. Legs wholly black, the middle and hind tibiæ with stout, irregular bristles on the outer side. Length 9–10 mm.

Nineteen specimens (4 ♂, 15 ♀), Idaho, Prof. J. M. Aldrich, June and November.

OBITUARY.

Felix Lynch Arribalzaga, the Argentine dipterologist, died on April 10, 1894.

Ed. G. Honrath, on April 19, 1894, in Gross-Lichterfelde near Berlin. Born in Coblenz, Aug. 11, 1837, and was a well-known Lepidopterist.

Entomological News for December, 1894, was mailed December 1, 1894.